

DOCUMENT RESUME

ED 187 942

CE 025 660

AUTHOR Robinson, Floyd; Grannis, Joseph
 TITLE Schools for Children. ACESIA Monograph 1.
 INSTITUTION American Council for Elementary School Industrial Arts, Washington, D.C.
 PUB DATE Sep 76
 NOTE 27p.; For related documents see CE 025 661-665.
 AVAILABLE FROM Dr. Keith Blankenbaker, ACESIA Publications Chairperson, 190 West 19th Ave., The Ohio State University, Columbus, OH 43210 (\$1.00)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
 DESCRIPTORS *Cognitive Processes; Creative Thinking; Critical Thinking; Disadvantaged; Disadvantaged Schools; Educational Environment; *Elementary Education; Industrial Arts; Outcomes of Education; Problem Solving; *Program Development; School Business Relationship; *School Role; Secondary Education; *Social Influences; *Student Development; Vocational Education

IDENTIFIERS Elementary School Thinking Project; Ontario Institute for Studies in Education

ABSTRACT

The two articles in this publication should be useful to those developing the kinds of materials, experiences, and thinking that elementary school industrial arts offers children. Floyd Robinson, in the first article, sketches some ideas along with the general scheme that the Ontario (Canada) Institute for Studies in Education's Elementary School Thinking Project has developed. He also touches on some problems that accompany the school's attempt to develop a comprehensive effort toward the improvement of thinking ability. In the second article Joseph Grannis considers schools as different models of society. He presents three models--(1) the family school, where children learn with and from each other and the teacher has a nurturing role; (2) the factory school, where students learn identical materials at a uniform pace, competition is stressed, and collaboration is limited; and (3) the corporation school, which includes team teaching and nongraded characteristics and where instructional materials are more specialized. Critically examining each model, he provides several adventures into alternative forms that integrate community and school and personal and social goals for a post-industrial society. (Y1B)

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SCHOOLS FOR CHILDREN

ARTICLE 1

Floyd Robinson

"To Create a Thinking Program for the Elementary School"

First published in *Orbit*, a journal for teachers.

Printed by The Ontario Institute for Studies in Education.

252 Bloor Street West,
Toronto, Canada M5S 1V6
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ARTICLE 2

Joseph Grannis

"The School as a Model of Society"

in Paul W. F. Witt, *Technology and the Curriculum*

(New York: Teachers College Press, 1968)

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FROM THE PRESIDENT

The American Council for Elementary School Industrial Arts, a council of the American Industrial Arts Association, was established in 1963 by forty-nine individuals who felt that industrial arts experiences should be provided as a part of the elementary school experiences of all children. Membership in the council has grown over the years and so have the services which are provided by the council to the membership. We hope that those who have been affiliated with us have also grown. This publication is designed to continue this professional growth in an effort that we may make good educational experiences even better educational experiences for our elementary children.

The purposes of the council are to:

- . . . clarify, promote and improve industrial arts and career education as a vital part of the elementary school curriculum.
- . . . coordinate, on a national level, the efforts of all who contribute to the development of elementary school industrial arts and career education.
- . . . publish materials relating to trends and issues in education for young children which will be of informational and practical use to the membership of the council.
- . . . organize action which will facilitate the general purposes of ACESIA, including the receiving, holding and administration of funds and property.

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ACESIA Membership Chairman
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PREFACE

This publication marks the first of a series of small monographs which are being prepared by the publications committee for distribution to the membership of the American Council for Elementary School Industrial Arts. Some of the monographs will be prepared from original manuscripts which has either been solicited by the publications committee or has been prepared by members of the committee, while other monographs will result from reprints of recently published articles which have application for those interested in elementary school industrial arts.

Special recognition for the articles selected for this publication is due Wes Perusek of the New Jersey State Department of Education who served as chairman of the publications committee during the time when these articles were selected. Credit is also due to the following members of the publications committee: Clarence Calder from the University of Connecticut, Luvern Eickhoff of the University of North Dakota, Laddie Gribick of the New Jersey State Department of Education, and Mary-Margaret Scobey of Eugene, Oregon. Gratitude is also expressed to the authors and publishers for allowing the council to reproduce the articles in this monograph.

The two articles presented in this publication are thought to be especially useful to anyone working with children. They should be very useful to those developing the kinds of materials, experiences and thinking which elementary school industrial arts offers children.

Each of the authors assembled to speak to us in this first monograph provides vantage points for viewing our own contributions to an on-going developmental program for children.

Floyd Robinson, in the first article, sketches some ideas along with the general scheme which the Ontario (Canada) Institute for Studies in Education's Elementary School Thinking Project has developed. He offers it as a way in which any school might initiate such a scheme. He also suggests the need to deal with the "troublesome implications of student thought" to the educator who plays the omniscient role.

In the second article, Joseph Grannis asks us to consider the total message that each school presents to children. "It is not the 'content' he argues, which 'students respond to first and remember longest' but the 'structure of the school' itself. He presents three models of this structure which each of us can verify. Then, critically examining each, he presents several adventures into alternative forms which integrate community and school, personal and social goals for our post industrial society.

To Create a Thinking Program for the Elementary School

Floyd Robinson,

OISE Northeastern Center, North Bay

The title of this article describes the goal that a number of OISE researchers and curriculum developers presumptuously set themselves a few years ago. Quite apart from its heroic title, our project seemed justified on the grounds that the development of thinking skills consistently appears near the top of any list of educational objectives, whether constructed by teachers or the general public.

Six years have now passed, and many tons of paper have been processed into the products resulting from the Elementary School Thinking Project, to use the name by which it has become known. During that period of time, members of our group have spent literally thousands of hours studying the thinking behavior of individual children, tryout out new methods and materials with small groups of children, teaching in classrooms, and helping teachers to understand and use our ideas. So perhaps the time has now come to render a verdict on the cirtical question: Can the typical school in Ontario significantly improve the thinking performance of the children with whom it is entrusted?

My own answer would be an incautious and unequivocal yes. I believe that enough ideas and related teaching materials have been developed that a school could start now in a small way and build cumulatively to a point where within a few years the thinking behavior of its students would be at a level far beyond what its staff presently believe possible. When we began this project and were groping for some kind of performance standard to describe what we had in mind, we sometimes said that our objective was to double the level of mental functioning of school graduates. Alternately we said our objective was to develop by the end of the elementary school a level of intellectual performance equal to or greater than that now exhibited by high school graduates. Nothing that I have observed in classrooms or in our own tests results caused me to believe that such objectives are in any way unrealistic.

But the cumulative approach necessary to bring this off will not be an easy one for most school staffs, who in many cases will themselves have to learn new concepts and skills and drastically alter some of their traditional way of relating to students, other teachers, and the broader spectrum of those who contribute in some way to the child's intellectual development. In the remainder of this article I will outline some of the more important dimensions of this needed change.

A Scheme for Thinking about Thinking

The first and possibly most difficult task for the school staff will be to develop a common conceptual scheme for a thinking program. By a conceptual scheme we mean a set of concepts for describing thinking skills more accurately than laymen do, and a developmental scheme or hierarchy that indicates a progression among these skills from the simple to the complex. Without such a conceptual scheme, the individual teacher will have no notion of 'what lead to what,' and hence will not be in a very strong position to do anything systematic. And unless such a scheme is shared among teachers who work at different grade levels and in different subject specialties, the possibility of a cumulative effort is virtually nonexistent.

This is, unfortunately, the situation that exists today. Those teachers who are making a deliberate effort to stimulate thinking skills often work at cross-purposes, without seeing the relationship of their efforts to those of other teachers. A good case in point is the language arts teacher who attempts to do something on 'critical reading' but who does not see that the skills for analyzing cause-effect arguments that she is trying to get the students to apply in their reading have their origin in physical science experiments and derive their meaning from that origin. Another good example is the tendency for science and geography teachers to work their own approaches to problem solving without ever seeming to recognize the commonalities or differences in their approach; the result is that these subjects are seen as completely different domains and there is little visible transfer of thinking skills between them.

The scheme to which our group has been moving recognized four levels of complexity and organization. At the lowest level we have what might be termed primitive intellectual abilities, which appear in young children without formal instruction and irrespective of the cultural milieu into which they are born. These abilities—observing, classifying, seriating, and setting up correspondences are some of the better known—help the child make sense of an otherwise bewildering stimulus world.

Once the child comes to school, however, a deliberate effort is made to develop what might be termed finding out skills. These skills—and we may think here of decoding written symbols, computation with numbers, measurement, graphing and tabulating data—have been invented by a culture, and they are deliberately taught in school because they are thought to be a prerequisite for effective functioning within that culture.

One of the important facets of our approach is a contention that each of these second-level skills can be decomposed into primitive intellectual abilities, and that knowledge of this connection is essential for effective pedagogical intervention. For example, although most schools treat measurement as a somewhat isolated component of the arithmetic program, simple analysis reveals that it is built upon skills of observation and setting up correspondences and that it also depends upon the notion of conservation.

At the next level of organization of intellectual ability the student draws together a number of second-order skills in a more complex episode of intellectual functioning. For example, near the end of the junior grades, or in the early senior elementary grades, the student may learn the notion of an 'experiment.' This concept acts as an organizing device that informs the student what skills are to be brought into play, and in what order, when he is trying to figure out 'what affects what' in a physical system. For example, as he tries to figure out what characteristics of a steel rod influence the amount it will bend, this strategy will inform the student that he should first identify the variables in the system (classification); then identify those that are potentially causal (classification); then vary one of these latter factors (measurement) while holding the others constant and observing the variation in the amount the rod bends (measurement); and finally interpret the result (numerical computation, classification).

These third-level intellectual skills which we have also termed problem-solving or inquiry strategies, have been one of the major foci of our Elementary School Thinking Project. What we set out to do, and did in fact accomplish, was to develop an integrated set of models that would apply broadly across the range of subjects taught in senior elementary grades. These strategies have been found to be effective, results varying from small but significant to large and spectacular gains, and it has become clear that a large part of the thinking component of the senior elementary school program can be organized around this scheme.

In one approach, for example, the initial emphasis is in the language arts field, where students are taught to categorize the questions that naturally occur in the course of becoming familiar with phenomena. Each class of non-factual questions tends to occur in a specific subject area, and the teachers in this area undertake to convey the appropriate problem-solving strategies for answering them; thus the strategy for logical inquiry is taught in mathematics; the strategies for experimental approaches to a cause-effect analysis are taught in science; a strategy for case-study analysis is taught in history; a strategy for correlational analysis is taught in geography; and a strategy for decision making is taught in guidance. But all the strategies are linked together in a progression—and at each stage the particular strategy under investigation is fed back into the language arts program and is employed as the basis for analyzing arguments that appear in the written accounts a student encounters in advertisements, newspapers, and public media generally.

While our own program has focused on these first three levels of thinking skills, we recognize that the attainment of the individual strategy does not complete the mind's attempt to organize its structures into broader patterns of functioning. Let us suppose, for example, that a classroom teacher reads the research on thinking in an attempt to find out what classroom interventions he might make. What this teacher will find in the literature is a large number of studies, many of them reporting the results of individual experiments. So it is clear that the teacher would have to invoke a strategy for experimentation as he reads each new article in order to determine whether its conclusions are to be trusted. And yet the intellectual strategy of a good research reviewer involves something more than this: it has to do, for instance, with what quantity of material will be read before a generalization is formulated, in what order the material will be read, and how individual reports—each relating to a particular context and often in apparent conflict—can be 'added together' to yield an overall picture. While we recognize the importance of trying to identify, describe, and (where appropriate) teach metastrategies of the type mentioned above, such a discussion would seem to take us beyond the scope of the elementary school program and hence beyond the present article.

Facing Up to Unpleasant Facts about Thinking and Schooling

No great enterprise can be founded upon self-delusion, and an early task of the school must be to make an honest assessment of what contribution its program actually makes to the child's thinking abilities. It is easy for the school to become confused here, because children come to it both short in physical stature and intellectually unsophisticated and leave much taller and much more sophisticated. So it is easy to believe that there has been as much growth in thinking as there has been in height, and, moreover, since the school's program is intended to develop thinking, that any intellectual growth observed is the result of its efforts.

This perspective has two obvious and fatal flaws. The first is that what the school takes to be intellectual sophistication in graduates is often little more than an enhanced verbal facility, which derives from a larger vocabulary and the use of more complex sentences. Verbal facility is a quality that may be respected in its own right, but it should not be mistaken for thinking. At several points in our investigations we have given the same task to students of different ages, and we have always been shocked to see how little growth there appears to be in the intellectual grasp of the problem once the excessive verbiage has been stripped away; on more than one occasion we have concluded after such an analysis that what the high school graduate has

really learned is not how to think better, but how to put up a verbal facade to hide the fact that he cannot come to intellectual grips with the problem.

The second flaw, of course, is to attribute whatever growth does occur to the efforts of the school, when the more plausible explanation frequently is that this change is the result of pure maturation or the effort of other socializing agencies. It would appear, for example, that certain structural changes do occur in children's thinking as they get older; these can be attributed to the interplay between inborn factors and a nonrestrictive environment and do not require any special effort of schooling.

The plain fact is that, lofty aims notwithstanding, our schools would be hard pressed to provide evidence that they produce growth in any sophisticated culturally useful type of thinking beyond that which can be attributed to maturation and the effort of other socializing agencies. Indeed, the programs in those areas that seem potentially rich in opportunities to develop complex thinking soon degenerate into a ritualistic rehearsal of low-level skills.

Mathematics, one of the two main pillars of the elementary school program, offers a good case in point. Very, very early in the game, arithmetic instruction reverts to something akin to mindless rehearsal of mechanical computation skills. We say the exercise is 'mindless' advisedly because—as most teachers will admit, and as a great deal of research has shown—the vast majority of students do not know how to use these computational skills in any sort of realistic problem situation.

And is the situation in the language arts field (to speak now of the other major pillar of the elementary school program) and better? It is probably true that there is a slow but consistent improvement taking place in our schools with respect to students' ability to read quickly and show at least minimal comprehension of what they've read; moreover, with the advent of 'levels' programs in reading, a significant proportion of more capable readers now reach adult standards in speed and simple comprehension by the end of grade 6. But what never fails to shock the observer is the incredible gullibility shown by even these better readers, who, it would appear, do not possess even the rudiments of an intellectual scheme for determining whether or not they should believe the opinions and conclusions in what they read. In the majority of cases this childlike innocence and trust of alleged authority appears to persist into adulthood.

So while the school must continue to propose lofty goals, and send optimistic messages out toward the general public, it is necessary for any subsequent action that a school staff try to make an honest appraisal of its actual accomplishments in the improvement of thinking performance.

Putting Some Oomph Into Our Thinking Pedagogy

The traditional pattern for local curriculum development is one in which committees of teachers meet together to share experiences and ideas, and from this sharing to propose modifications in present practice. This approach works fairly well when teachers are dealing with a type of behavior for which the school has built up a considerable body of professional knowledge. But it fails utterly, however, when the objective is the development of some new kind of skill, or a radical improvement in the standard of performance in a conventional skill.

We attribute a large part of whatever success we have attained in our thinking program to the opportunity team members had of spending many hours studying the thinking performance of individual children. But teachers themselves must do this if they are to check out a conceptual scheme for thinking, for secondhand accounts cannot adequately convey the required

sensitivity to the phenomena. Even more important, perhaps, novel ideas for intervention are more likely to emerge when the teacher remains closely tuned to the child's ongoing work—that is, in a one-to-one situation. Third, and this above all else, it is no secret that many of the significant cognitive leaps occur in the same one-to-one situation, where the teacher can judge the precise moment to force such a leap and can devise a teaching vehicle that is particularly right for this individual child. As an indication of the magnitude of the effect of this personalized knowledge and individual teaching we very early developed the rule of thumb that what the teacher was able to do in the way of developing thinking skills in the large-group situation we could comfortably handle two grades lower with small groups of children, and four grades lower with individual children.

Now there was a time, and that no so many years ago, when teachers could have acknowledged such discrepancies in performance with equanimity, asserting that: 'We know we could do wonderful things if we could observe individual children and teach individually, but you simply have to face up to the realities of the classroom.' But this reasoning is beginning to sound a bit hollow and suggests something other than lack of opportunity. For as far as the observation of individual children is concerned teachers now have available a number of professional development days that could be much better used for that purpose than for the various type of 'entertainment' that are being thrown into the gap, often at the last moment, to give the appearance of planned activity.

And as far as individualized instruction is concerned, one of our members has produced massive documentation for the proposition that schools can increase their effective manpower in the primary grades by a factor of two or three by simply recruiting and putting to use unpaid voluntary helpers of all kinds—parents, older students, senior citizens, members of professional associations, and the like.

A Remaining Conundrum: Creating the Right Motivation for Thinking

There are some very significant ways in which school climates must change if they are to foster the development of thinking skills. At a fairly superficial level of analysis, it seems obvious that the school that wants to teach thinking must be prepared to abide by the troublesome implications of student thought. At a certain phase the student will sharpen his newly acquired thinking skills on whatever material comes to hand, and the decisions and judgments of teachers and principals may become favorite targets for this expertise. We have seen inquiry-trained students, for example, openly challenge the decisions of a principal on the grounds that his solution was based on an inadequate conceptualization of the problem and was inferior to theirs. Such intellectual muscle-flexing could be disturbing to the teacher or principal who plays the omniscient role.

It is one thing, however, to tolerate and encourage the barbs and rasps of a budding thinker, but this says little about how these skills should be taught in the first place. This is an issue on which our group has remained divided. Some of us have seen nothing wrong with the approach that says, 'Let's lay specific skills on students and let them get their kicks from exercising a newly acquired competence.' Another group has argued for an appeal to the child's natural competitiveness and for the introduction of a broadly based set of thinking skills through the use of classroom games. And still another group takes the position that intellectual strategies should grow out of the student's experience, as a formal recapitulation of what he has been doing intuitively in his efforts to find out for himself. Difference of opinion is rooted in differing philosophical views of the nature of human motivation and growth; and while there is undoubtedly no final answer, developing a com-

prehensive thinking program in a school requires that a staff think through its position on these matters.

Summary and References

This article has sketched the general segments that unites the several segments of OISE's major thrust in elementary school thinking and has touched on some of the problems that attend the school's attempt to develop a comprehensive effort toward the improvement of thinking ability. For the specifics of the program developments in greater detail, the reader is referred to the following:

For a general account, see F. G. Robinson, J. Tickle, and D. W. Brison, *Inquiry Training: Fusing Theory and Practice* (Profiles in Practical Education No. 4, OISE, 1972).^{*} For a brief account of methodology see F. G. Robinson and D. Story, 'Teaching a Model for Experiments' (Northeastern Centre, 1973). The complete program is found in F. Robinson et al., 'Inquiry Training Program' (Niagara Centre).

For an overview of primitive intellectual abilities, see L. Popp et al., 'Basic Thinking Skills' (Niagara Centre, 1974). See also E. Regan and K. Leithwood, 'Grade One Thinking Units' (OISE, 1973). For specific accounts of how primitive intellectual abilities are developed into finding-out skills, see Mathematics Learning Study Group, 'Classification and Logic' (Niagara Centre, 1972); J. P. Robinson et al., 'Rate and Ratio' (Niagara Centre, 1973); 'Measurement Monograph' (Northeastern Centre, 1973).

For an account of how the proposed scheme for thinking relates to critical reading, see 'Critical Reading Monograph' (Northeastern Centre, 1973).

For the use of volunteers, see F. Robinson, D. Brison, H. Hedges, J. Hill, and C. Yau, *Volunteer Helpers in Elementary Schools* (Profiles in Practical Education No. 1, OISE, 1971).^{*} Numerous other materials have also been prepared by H. Hedges, Niagara Centre.

For developing skills through games, see C. Bereiter et al., 'Thinking Games' (OISE, 1973). For the experience/intuition viewpoint, see R. Kenzie, 'From Self-Directed Inquiry to Experimentation' (OISE, 1974), and R. Kenzie, 'Toward a Concept of Self-Directed Inquiry' (OISE, 1974).

^{*} Available from Publications Sales, OISE. Inquiries for all other materials listed should be addressed to Irene Leps, Office of Field Development, OISE.

Note: The main participants in the Elementary School Thinking Project have been Valerie Anderson, Carl Bereiter, David Brison, Glen Evans, Cathy Frye, Hank Hedges, Jane Hill, Bob Kenzie, Ken Leithwood, Irene Leps, Jim Love, Len Popp, Ellen Regan, Floyd Robinson, Paul Robinson, Howard Russell, Pat Sullivan, and John Tickle. This diverse group has never been entirely of one mind, and the present article purports to reflect the views only of the author.

The School as a Model of Society

Joseph C. Grannis, Associate Professor,
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Professor Grannis was completing this essay at the time of his address to the conference on Technology and the Curriculum. The essay has since been published in the *Harvard Graduate School of Education Association Bulletin*, Volume XII, Number 2, Fall, 1967. Because Professor Grannis' presentation to the conference was based in part on this essay, and because of the limited circulation of the *Bulletin*, we are pleased to include the essay in the report of the conference.

Every school represents to its students a model of society and its possibilities. In the very composition of the students and teachers, in the authority and decision-making structure of the school, in the ways that people talk with one another, learn and work and play together, and in the expectations the school holds for its students—in all these ways, and more, the school instructs about society. We are accustomed to thinking of content as the most important learning a school conveys to its students. It is the structure of the school, however, that instructs most systematically, and it is this structure that the students repond to first and remember longest.

In this essay we shall look at the schools of the nation today in terms of several different models of society that they present to their students. Each of these models is an ideal type, and no single model may fully describe a single school. It will be necessary to think of the schools in terms of different combinations of the models. We shall have to weigh the adequacy of these models for the school today, and shall then have to examine society to uncover new possibilities for the schools.

The various models of society that we find now in the schools have originated in different sectors of the society as a whole, and at various stages of its historical development. Our capacity to change the schools depends on our understanding not only what they teach about society now, but the process by which they came to represent various views of society. Three models will serve to describe a great deal of what we can see now in the schools. A "family" model can be most readily associated with preschools and with the primary grades of certain private schools that had their origins in the progressive era. A second model, the "factory" school, is the most prevalent type in the elementary and secondary schools of the nation today. It originated principally in the cities, in the late nineteenth and early twentieth centuries, for the primary purpose of inducting immigrant and rural youth into the working-class life of the industrial system of the times, and secondarily for initiating some youth into the ways of American middle-class life of these times. A third model, the "corporation" school, has been developing most rapidly in the schools of the suburbs during just the last ten years or so. Its primary function seems to be the induction of youth into certain of the ways of a modern bureaucratically organized society.

Team teaching and nongraded patterns of organization characterize the corporation school, while rigidly graded and horizontally segmented patterns characterize the factory school. These, however, are only the more manifest structural features by which these schools can be identified. Underlying them are significant differences in the attitudes of the schools

toward education, toward the work and lives of the students and the teachers in school, and toward life in society itself.

Again we stress that no single model adequately describes all that happens in a single school, especially when we take into account the variations among different classrooms within a school. For example, a teacher in a school patterned like a factory may attempt in certain ways to be a mother or a father with his students, and to treat the class like a family in some of the students' dealings with one another. Nonetheless, each of our three models has a coherent structure and message, and individual schools tend on the whole to represent one model more than another, in their overall organization and in their effects on the students and staff within them.

The "Family" School

It has been observed that the early New England school was instituted in response to the extended family's ceasing to fulfill certain functions in colonial society. We would add that the structure of the colonial school itself reflected certain features of the colonial family, both in the relationships among its pupils, who were of different ages in a given classroom, and in the authority exercised over the pupils by the master of the school.

John Dewey stated most explicitly the idea of the family school as it was developed by the progressives. The model of school that Dewey promulgated in *The School and Society* still governs the conduct of some school today.

If we take an example from an ideal home, where the parent is intelligent enough to recognize what is best for the child, and is able to supply what is needed, we find the child learning through the social converse and constitution of the family. There are certain points of interest and value to him in the conversation carried on: statements are made, inquiries arise, topics are discussed, and the child continually learns. He states his experiences, his misconceptions are corrected. Again the child participates in the household occupations, and thereby gets habits of industry, order, and regard for the rights and ideas of others, and the fundamental habit of subordinating his activities to the general interest of the household. Participation in these household tasks becomes an opportunity for gaining knowledge. The ideal home would naturally have a workshop where the child could work out his constructive instincts. It would have a miniature laboratory in which his inquiries could be directed. The life of the child would extend out of doors to the garden, surrounding fields, and forests. He would have his excursions, his walks and talks, in which the larger world out of doors would open to him.

Now, if we organize and generalize all of this, we have the ideal school. There is no mystery about it, no wonderful discovery of pedagogy or educational theory. It is simply a question of doing systematically and in a large, intelligent, and competent way what for various reasons can be done in most households only in a comparatively meager and haphazard manner. In the first place, the ideal home has to be enlarged. The child must be brought into contact with more grown people and with more children in order that there may be the freest and richest social life. Moreover, the occupations and relationships of the home environment are not especially selected for the growth of the child; the main object is something else, and what the child can get out of them is incidental. Hence the need of a school. In this school the life of the child becomes the all-controlling aim. All the media necessary to further the growth of the child center there. Learning? certainly, but living primarily, and learning through and in relation to this living.¹

Our terming this a family model emphasizes the intimate manner of the children's learning with and from each other, and the teacher's nurturing role, as one who shares with the children certain interests and occupations, who provides materials and settings for the children's growth, and who

1. John Dewey, *The School and Society* (Chicago: Phoenix Books, 1963), pp. 34-36.

facilitates the children's solving of problems that develop essentially out of their own life in the environment created for them.

Dewey meant his Chicago Laboratory School to be a model for all elementary schools. He discussed at length, in *The School and Society*, the difficulty of making meaningful connections among the myriad occupations and enterprises of an industrial society, and he argued that the life of the family, especially the preindustrial or rural family as he had known it in his own Vermont childhood, provided the key to a way that children's experiences in society could be integrated. The family school so construed does not correspond in important ways to life in the family as we know it today. It represents a family where the occupations of the adults were carried on in the home or the near vicinity of the home, and where the children witnessed and participated in the production of all life's necessities.

Since the early 1930's English educators have been working deliberately to develop Dewey's concept of the family school, and today it is in effect in fully half of the English infant schools, the public schools for children from five to seven years old. The passage quoted above reads very much like the descriptions of infant schools that visitors from this country have published. Children in an infant school classroom work spontaneously with all kinds of materials that have been provided for them: clay, wood and tools, musical instruments, Dienes blocks and Cuisenaire rods, cooking equipment, pendulums, books, and on and on. They move freely about the classroom and work in the corridors and outside. Only at the beginning of the day do the children and the teachers all sit together, for "prayers" that often take the form of a little play or some other presentation. During the rest of the day the teacher meets the children individually or in small groups, as she encounters them working on various problems they have set for themselves or forms a small group for reading and discussion. Five-, six-, and seven-year-olds are all placed in the same room. The pupil-teacher ratio in the infant school is forty to one. According to the British government's Plowden Report, English educators now consider that the family model has proved its worth in the infant schools. They plan next to extend the model to the junior schools for children eight to eleven years old.

Some elementary school teachers in this country have tried to implement the family model on a limited basis in their classrooms. On balance, however, the model has had little enduring impact on our elementary schools. This is testimony to the strength of the very forces Dewey discerned in industrial society and wanted to counteract through his vision of schooling. It also points to certain limitations of the model itself, which we shall consider after examining the different models that now prevail in most of this country's schools.

We can further sharpen the concept of the family school by taking note of two current controversies. The first concerns the appropriateness of the family model for lower-class as against middle-class children. Bereiter and Engelmann have observed, correctly, that the private preschools in which the family model has flourished have been largely for middle-class children. Middle-class children, they say, have already learned impulse controls at home, and thus they need a permissive environment in the school to free them up. In contrast, lower-class children, they maintain, have not learned these controls at home, and consequently need a more highly structured and authoritarian school environment.

Whether the distinction between permissive and nonpermissive practices applies so neatly to lower- and middle class homes is much more questionable than Bereiter and Engelmann indicate. More than this, however, it must be realized that the model of the family school does not stand simply for permissiveness. It has to do with the integrity of the child's self-concept in

relation to other individuals and to the world around him, a concern that the schools already readily violate in their dealing with lower-class children. In abandoning the family model altogether for a combination of the factory and corporation models, Bereiter and Engelmann—and the children themselves—may be losing more than they gain.

A second current controversy involves the elementary school's use of team teaching, a characteristic of the corporation school. Some educators have looked askance at team teaching in the elementary school, precisely because they identify the self-contained classroom with the family model and fear that the model's advantages will be lost. We shall see that there is good reason to question the intimacy and spontaneity of relationships among the individuals in a corporation school. At the same time, however, we must recognize that the family model has been overwhelmed by the factory model in most self-contained classrooms today. In fact, it is possible to combine the family and the corporation models to a certain degree, as was evidenced by Dewey's Laboratory School itself, where a variety of teachers and other staff, together with professors from the University, planned and carried out many of the affairs of the school collectively.

The "Factory" School

Students in a factory school classroom are generally found working on identical material at a uniform pace. Identical grading standards are presumed to be applied to all the students, though in practice there are great discrepancies in their application to different students, or in their application to different performances by one and the same student on various occasions. Much of the work is assign and recite, and the pattern of dialogue is often rote teaching. Students in the factory school do not get to see the teacher "do things" that matter to the teacher himself, except teach, nor do they see the teacher working on his own questions.

At any given time it is expected either that the students already know what they are to do, or that they can pick it up with a little telling, or that they do not know—the distinctions are never quite clear—but that, in any case, it is the teacher's job to demand the doing of the children and to reward or punish according to the outcome. Thus the students in the factory school learn to think in terms of a crude standardization of products, effort, and reward, and at the same time to expect a certain arbitrariness of the standards by which their work is to be done and judged. They learn to expect the failure of many individuals to meet these standards. Finally, they learn the necessity of repetition, or, eventually, out-and-out withdrawal from the production line when individuals fail to meet the standards that have been laid down for them.

Competition is encouraged among the students in the factory school. However, it is a limited form of competition compared with that which is most likely to be functional in work and society today. The factory school does not foster individual initiative and quality of work, but stresses instead a competition in sheer quantity and rate of production—the best rate being that which is neither too fast nor too slow for the line.

Collaboration too is very limited in the factory school. Elementary school classrooms often have routines in which the students take turns cleaning the boards, taking attendance, and so on, and secondary school students may monitor the halls or manage the bookstore. Students may make a report together or undertake a mural or a skit cooperatively. For the most part, however, one is hard put to find collaboration on difficult problems that require cooperative planning and the varied skills of different individuals, except in the "extracurricular" activities that really depend on collaboration.

A punitive authority prevades the factory school, emanating from the

principal's office and delegated to the teachers. In the mix of the factory and family models, this authority of the school is paternalistic. Certain students are depended on to set the pace and exemplify the standards set down for the group. Often the teachers delegate some of their own authority to these students, and certain students emerge from the ranks to become more identified with their bosses, the teachers. Sometimes, however, the students reject the system. They sit in sullen silence, or they range themselves against the teachers and the school and bring the works to a futile halt.

The students in the factory school are exhorted to listen to the directives of their superiors. They are taught to say the words of a vaguely equalitarian creed, as a way of glossing over or putting up with all kinds of individual inconsistencies and injustices they experience. They learn to punch a clock, and to stay put in their stations, through hours of uninterrupted, or disrupted, monotony and tedium. Their teachers, too, may feel all these effects of a factory way of life in the schools.

We have already noted that the family model mitigates the effects of the factory school for the students and teachers in some classrooms. Another concept of society that functions in a similar way is the idea of a community of scholars. As a model for a whole school, it is perhaps most evident in this country in a few of the private secondary schools that have deliberately imitated the college system of Oxford and Cambridge and the English tradition, in contrast to that of the continent, of a community of scholars and gentlemen. Individual teachers, particularly those with a liberal arts background, sometimes manage to develop this relationship with their students in public schools, especially if the students are bright and come from the middle class. In the face of conditions in the factory school, however, the community of scholars is very difficult to bring off.

That most of our suburban schools retain many features of the factory school has led one visitor from abroad to observe that American schools in the suburbs are a lower-class joke on the middle class. As for the inner-city schools, the notion that they represent middle-class norms and attitudes to the students is a gross oversimplification of what actually happens. It is the norms and attitudes of the middle class toward the lower class that are most in effect in our city schools.

The "Corporation" School

The full-fledged corporation school includes both team teaching and nongraded characteristics. In practice, however, these are not always joined together and may be combined with features of other models. Again we resort to the device of a caricature or an ideal type to emphasize its essential features. Our initial description of the corporation school will appear to be more positive than our account of the factory school, but, as we shall see, the corporation school also raises troublesome questions.

Team teaching in the corporation school recognizes first the different capacities and interest of the teachers themselves. The teachers do not, however, simply divide the labor up among themselves as in the factory school. They plan, conduct, and evaluate the instruction collectively. This pushes the teachers to rationalize much of the teaching that they would otherwise do intuitively or mechanically, and it forces them to adjust their own interests and styles to the requirements of the team as a whole.

While team teaching alone does not necessarily recognize the different interests and capacities of the students, it does do so when combined with a vertically nongraded scheme. This is especially true if the scheme does not simply locate the students along various straightline continua, but allows

them to diverge and to concentrate more in one area of study or another. The corporation school tends to develop an elaborately differentiated scheme for evaluating and reporting students' progress, and it often involves the students themselves in evaluation of their progress. It sets up contracts with individual students for their work. Students and teachers are grouped in numerous ways for various purposes, and complex schedules evolve to allocate the time and resources of the school.

Materials of instruction too are much more specialized than in the factory school, many of them being created by the teachers themselves for specific occasions. Teacher aides facilitate this development of materials, either by working on the materials themselves, or by releasing the teachers from noninstructional duties so that the teachers gain time for planning and development. Again, the corporation school is able to make much greater use of expensive equipment—projectors, computers, teaching machines, tape recorders and headsets, and so on—since the use of this equipment can be rationalized for larger pools of students and teachers.

It is not merely availability of these resources that leads to their use in the corporation school. The whole attitude of the school is oriented toward planning and rationalization and toward the employment of specialized skills and technology. Change and innovation are institutionalized in the corporate school. This is experienced by the students in the shifting combinations of people and resources to which they are assigned, and in the constantly changing schedule of the school's activities. It is probably experienced by the teachers with even greater force, in the degree that they change their objectives and strategies from year to year or from one month to the next.

There is a highly differentiated hierarchy in the corporation school. The principal, team leaders, regular teachers, and teacher aides all stand above the students, and the authority to make decisions is distributed systematically throughout the hierarchy. Some of the authority reserved to the principal in a factory school is assigned to team leaders in the corporation school, and teams generally have more control over the curriculum than do teachers in the factory school.

Two questions about the corporation school are especially crucial. How much and what kind of control do the students themselves have over their activities? And what kinds of feelings and attachments develop between the students and the teachers and among the students themselves?

It is striking that in some corporation schools the students have even less control over their activities than in the factory school, where the teachers makes so many decisions spontaneously, and the pupils learn to manipulate, if only by sabotage, the teacher's propensities to their advantage. A couple of factors work against the students' control in the corporation school. The most obvious is that the coordination of a team's various activities and resources may impose more rigid time constraints on the classes than is the case within the self-contained classroom, at least in the elementary school; thus a group cannot so easily persevere in something that is especially rewarding, or break off from an activity they dislike. A second factor is the rationalization of instruction. The teachers may do so much detailed planning collectively that very few decisions are left to be contingent on the immediate circumstances of the ensuing activities. A similar observation can be made about the programmed materials used in the school.

In many corporation schools deliberate provisions have been made for individual students' selection and timing of their studies, often in connection with elaborately constructed study centers and multi-media retrieval systems. Students have been involved in the actual planning of their studies, including quite ambitious individual and group projects, instead of their just being let in on the teachers' plans, as in other corporation schools. All of these

variations, however, remain quite distinct from the family model. Both the teachers and the students are more systematically organized, and the instructional process and materials are more highly rationalized.

The feeling relationships between individuals in the corporation school are more detached than in the factory school, again at least at the elementary level, and certainly more detached than in the family school. In the factory school, the different individuals do everything in common, whereas in the corporation school there are many more limited-purpose associations. A class in the factory school tends to develop a relatively stable social system, while the system in the corporation school is very fluid. In the one, a class has "good" students and "bad", trouble-makers, teachers' pets, all in all a familiar backdrop of individuals against which a given student measures himself. The class develops a history of happenings with each of the teachers who has succeeded or failed in molding it to his special inclinations. In the corporation school the students, who are placed in a variety of groups, are constantly reevaluated in different settings, and the groups to which they belong are more diffusely associated with the team or the institution as a whole. Furthermore, the teachers consciously construe their role as more professional and less nurturing, a distinction that has been emphasized in one elementary school system by designating a teacher aide as "team mother."

Research conducted by Millie Almy in a corporation school at the elementary level (the only research of this specific nature known to the author) indicated that the children did indeed differentiate among their various teachers, though it did not reveal how much knowledge of a given teacher there was compared to a self-contained classroom. The same research showed that the children were less likely to give responses indicating emotional attachment to the teacher than were the children in self-contained classes in a control school (presumably a family-modified factory school), and that on indirect measures of their perception of teachers the children in the team situation more often saw the teacher as either neutral or punitive, less often as supportive or helpful. Again, while children in this school knew considerably more children by name than did children in the control school, they more often reported that their friendships had been made at home rather than at school.

In all of its characteristics the development of the corporation school parallels the trend in many of our social institutions today, from the more entrepreneurial to more bureaucratic forms of organization. This underlines all the more the import of our questions about the students' control and feelings in the school, for these are questions that are raised by the life of the individual in modern society generally. The corporation school represents to its students a society in which there is greater interdependence, in which there is greater specialization of individuals' tasks and functions, and in which technology and institutionalized processes of change and innovation play a greater part than in the societies of the past. Whether this society is to entail less or more control for individuals and greater or less feeling and empathy in their relationships with others, is a question that has been answered differently by different analysts of the society at large. The answer it is given in the schools depends on choices we make.

Who are the Disadvantaged?

We know that the poor in our society are disadvantaged, and that somehow inequalities in the schools attended by lower- and middle-class youth play a part in keeping them poor. Understanding just what these inequalities are is much more difficult. Again, we know that Negroes and Puerto Ricans are disadvantaged in our society, and again it is hard to say exactly how the schools contribute to their being disadvantaged.

The problem is compounded when we realize the extent to which all the nation's youth are disadvantaged by the schools, as the schools have stressed getting ahead, or not getting ahead, in narrowly defined and isolated channels. In addressing ourselves first to the effects of three different models on students' achievement, we are recognizing that all students have to achieve if they are to compete on equal terms in the economy. At the same time, we do not want to think in terms that will just force lower-class students into the tracks that already confine the middle class.

When we ask which of our three models of school is most effective in raising students' performance on standard achievement test, the answer seems to be extraordinarily simple. At least in the present stage of knowledge about teaching, none of the models is superior to the others. The Plowden Committee in England conducted a major study of the achievement of children in the infant schools organized on the family model and children in conventionally organized infant schools (we do not know whether to call them "factory" schools in the English context) and found slight differences in favor of the conventional schools. However, they found that these differences in achievement disappeared in later school years, and they concluded that the result was explained by the fact that the children in the family-model school had no practice in taking tests. Comparisons of team teaching and self-contained classrooms in this country have not shown consistent differences in the students' achievement.

The results of nongraded instruction are not quite so clear-cut. In particular, it has been found in some programs that allowing students to define their own goals on a contract basis raises achievement, while programs where the teachers have decided what level the students should be working at seem to produce no differences on achievement tests in comparison to graded instruction. The results of programmed and automated instruction are also mixed, but the few programs and devices that appear to show promise are not likely to be available to most schools for many years.

In the last several years, a host of compensatory education programs for lower-class Negro youth has used various combinations of team teaching, individual tutoring, involvement of parents, cultural enrichment, new instructional techniques, and direct appeals to students' aspirations. The devastating conclusion of the U.S. Commission on Civil Rights' report, *Racial Isolation in the Public Schools*, is that none of these programs has produced lasting gains in the achievement of these youth so long as the students remained segregated from middle-class students. On the other hand, their data show that lower-class students who have been placed in schools with middle-class students, however these have been organized, have made significant gains in achievement. These findings parallel the Coleman Report conclusion that "the social composition of the student body is more highly related to achievements, independently of the student's own social background, than is any school factor."

What are we to make of all this? The first thing we have to recognize is that really not very much is known about teaching any students; The lower-class student's achievement in a school with middle-class students is a function of the general level of discourse and expectations that can be maintained in a predominately middle-class classroom, not any special wizardry of the teachers. As many students of the problem are concluding, this argues strongly for the integration of lower- and middle-class students, and thus for the integration of white and Negro students, since these divisions in our society are so related. It also argues for our persisting in trying to learn more about teaching and learning in relation to all students and thus for our continuing to experiment with different models of instruction.

The second thing that we have to consider is that the proponents of the

various models of school, and particularly the advocates of the family and corporation schools, remain convinced of the worth of these models despite their not raising students' levels of achievement. Spokesmen for the family school, beginning with Dewey himself, have always stressed that conventional academic achievement was not the only aim of the school, and that we must be concerned with the whole life of the child. The proponents of the corporation school are very much concerned with achievement, but their not getting significant gains in no way diminishes their ardor. We think the explanation of this is that it is the corporation model of society itself that they prize, perhaps most of all because of the satisfactions it gives the teachers, but also for the way of life that it represents to the students. Defenders of the factory school can be counted on to rejoin, whenever one questions the authoritarianism or the monotony and failure the students experience, "But isn't that the way life is?"

This brings us back to the point we have been arguing from the beginning. Underlying our debates about teaching are fundamental questions about life and society itself and how the schools should construe the lives of their students and teachers. We think the issues posed by the different models are important and valid, but we want to argue that none of the models is adequate for the schools today. Contemporary society does require more competence in all its members. The basic problem of both the factory and corporation schools is that they are preoccupied with the accumulation and specialization of knowledge and skills, and too little concerned with personal and social integration. Learning is represented to the students as a good to be hoarded for some future day. It is passed down in pieces and subjects from those on high who have already got it, not personally constructed or reconstructed. The message of the schools is that only students learn, while those who have already made it into the world pursue life's real occupations. Only teachers teach, with all kinds of paraphernalia to assist them in the job.

Awaiting the students outside and in the years to come is a fixed system of slots, and innumerable obstacles have to be hurdled on the way to finding one's predestined place. Students in the corporation school learn that these slots are complexly organized, and that interpersonal skills and adaptability are required for success in the system. Students in the factory school learn that they individual must struggle alone toward these slots, trying to shoulder his way above the average without incurring the wrath of those in the way.

We have addressed observations to both the factory and the corporation schools. However, there is a crucial sense in which they do not apply equally to all the students in these schools. Lower-class youths are systematically disadvantaged by the factory school. As we have indicated, this is not because it is a less efficient way of raising conventional achievement scores. The factory school, like the plantation of an earlier era, peculiarly lends itself to a perception of the lower class, and especially of black people, as aliens who must learn a menial conception of work and life before they are fit to take their place in society. The place that awaits them is at the bottom of the system.

This interpretation of the way in which the factory school disadvantages lower-class youth reflects our conviction that the expectations exerted by the whole structure of the school, not just individual teachers' expectations, can cripple the students' self-concepts and performance. We need data on the effects of different schools and programs on all aspects of individuals' development, not just on academic achievement alone.

Whether either the factory or the corporation school is more destructive to middle-class youth we do not know, but the toll is high among them, too: school dropouts, cynical youths who despise the system at the same time

that they make it in the schools, youths who tune out while they drift through, and hippies who reject the whole society. Some find the system confusing; others find it materialistic, and they play the game or leave it according to their values.

A great paradox lies under all of this. From the outside, modern society can be seen to be a complex, functioning whole—not integrated in every respect, and functioning badly for many purposes, but nonetheless as interconnected whole. From within it can be felt as fragmented and disconnected. Durkheim applied the term "organic" to modern, not primitive, society, in order to distinguish it as a system of interdependent, uniquely functioning parts. Yet it is precisely this differentiation of the parts of modern society that makes it so difficult to experience one's life as a whole, and to have an effect on the society where one wants to change it.

This is again the problem Dewey posed for education in *The School and Society*. His solution has not prevailed, however, and we have to ask why. Callahan, in *Education and the Cult of Efficiency*, has laid the blame to a business mentality that has dominated educational policy making at the local level in the schools and has tried to apply cost accounting and time-and-effort productivity standards to the myriad decisions of running and "efficient" school system. Newmann and Oliver, in their article "Education and Community," have extended this explanation to include all the ways that the education industry today thinks of learning and the students themselves as products of an essentially economic system. Our own argument goes still further. Educators and taxpayers have taken economic institutions not only as a model for how they should operate the schools but as a design for what the students are to learn in them.

A second explanation for the failure of Dewey's solution has to do with the family model itself. The author believes that the family model, perhaps with some corporation features, is the most appropriate model for the preschool and primary years, but that it becomes increasingly less adequate as we try to apply it to the later years of school. Whether it can be applied in the early years in the same way it has been applied in England depends chiefly on the differences and similarities of family life in England and America, or the norms and expectations developed in the home. This is the same question for research that we noted earlier.

The trouble with the family model as the students get older is its increasing discrepancy with the larger institutions of society that impinge on the students' lives. Dewey himself recognized this insofar as he maintained that a part of education would have to be more formal and disciplined in these later years. He also recognized it in stating that the schools should collaborate with business, science, and other institutions outside the school. However, the conception of disciplined thinking that he most often put forth was a highly individual, common sense problem solving. Similarly, the model of the family school itself so dominated his rationale for schools that the progressives never got beyond it to implement a more viable relationship of the schools to society.

Harold Rugg and the later reconstructionists did concern themselves more with the need for the school's dealing with society's problems, and they envisioned the school's becoming a center for community life. Again however, they did not come to terms with the nature of the modern community and society, and their proposals lacked incisiveness accordingly.

Society as a Model for Schools

Individuals find meaning and control in modern life, as in the life of any society, by participating in its social institutions—political, economic, ar-

tistic, nurturing, and so on—or by rebelling against institutions that they understand are stupid or inequitable. Our problem, in essence, is that effective entry into most of the institutions of modern society is a great deal more difficult than was entry into the institutions of pre-industrial society. Not only does it require more technical competence to be effective in any given institution, but initiation into one does not, as it did in pre-industrial society, go hand in hand with initiation into the others. One does not simply enter or participate in a community with political, economic, artistic, and other aspects, but rather, one enters highly differentiated communities.

There are two broad implications of this kind of thinking. One is that we must systematically examine the society's institutions for the ways that youth and the schools can participate in them. The second is that the whole question of the "community's" control of the school should be conceived of in terms of a plurality of communities of interest, each having relatively greater control over that part of the school's program which it is competent to, and cares to, participate in. This model of control is not meant simply to replace the egalitarian idea of a school's being controlled by elected representatives (a school board, more or less local as the case may be), but to complement this idea, as it does in the relationship of the formal and informal aspects of our various units of government. In order for this control by interested parties to be possible, the school would have to be open to scrutiny and participation by the various communities of interest. Thus we are talking both about facilitating the entree of students and the schools into the society's institutions of politics, economics, the arts, nurturing, science, scholarship, and so on, and about making the school itself more hospitable and permeable to persons having these interests.

One can look at a variety of developments in the nation today and see that their potential for education is very large from this point of view. The confrontation of the schools and inner-city communities today is itself proving to be a political education for all concerned. We need to ask in what ways youth could be involved in this, as indeed they have been in some communities where they have participated in demonstrations. They might be a part to the ongoing dialogue that must ensue between the schools and their constituencies and they could be involved in other political dialogues, for example, debates in suburban communities about fair housing codes, industrial zoning, and recreation. Student governments and civic courses have been a farce on politics, and the students know it. In combination with students' involvement in politics, these activities could be made very potent.

Work-study programs have induced dropouts to continue their education. Could not these opportunities be extended to all students in secondary schools? At all levels of school, facilities should be developed both by businesses and industry for an active interchange, as students develop questions about the workings of business and industry and about the kinds of satisfactions and problems that men have in different careers. Likewise, ways should be sought to involve the schools and businesses and industry together in community action programs, to improve property or employment possibilities or to develop relationships to other communities. In all of these efforts, and in the schools' participation in other institutions, there must be a deliberate concern with the students' and the general community's sense of control of their fate. No one can have unlimited control, but there are great differences in the control exercised by different individuals in modern society. These stem both from their different resources and their varying sense of the control that they can exert as individuals or in collaboration with others.

The concept of the community school has long included the provision of educational and recreational opportunities for adults and older people. It should be implemented in such a way that there is free traffic between adults and the young in the vicinity of the school, and in a way that allows the old to participate directly in the education of the young, as readers, historians, craftsmen, and so on—more than anything else, perhaps as people who have watched the times change and have helped create or resisted change. Again, the idea of the community school is being extended today to include the school as a coordinating center for the great variety of social and welfare services that are now becoming available to citizens. Simply getting information about these opportunities is a major problem for many who might benefit from them, and petty but enormously frustrating problems of the law and communication beset many who try to claim new rights. Students could contribute to, and learn much from, these efforts.

Artists and craftsmen are being invited to work and perform in residence in a few schools today. This ought to be a practice of all schools from time to time, and exhibitions of contemporary art and crafts should be staged in the schools. Cultural enrichment programs have reportedly had a negative impact in some cases, as students and teachers have been taken out of their own neighborhoods to the places where art, music, and drama are conventionally offered. It is crucial that the arts be made an integral part of the school community.

A great deal of effort is being expended today to reform the subject offerings of the curriculum, in order to bring them more in line with the disciplines of the sciences and the humanities. It is vital that scholars be concerned with the validity of inquiry in the disciplines, but two problems must be recognized. First, the new curriculum is fast being transformed in practice into the same old message in a new form, as it pours vast new quantities of knowledge into the schools for students to accumulate. The notion that there are certain fixed structures of thought to be mastered in order to have knowledge of the disciplines may well gain the upper hand over the sophisticated entreaties of a few that these structures are man-made and that every individual must make choices and develop his own style within a discipline. The key to this problem too may be to think of the disciplines as social institutions. We might then construe the concepts and procedure of the disciplines in a more social light, and might ask, far more boldly than we have so far, how the quarrels and rivalries of the scholars, their ethical dilemmas, publishing mores, financing ventures, conventions, and so on, can be shared with the students. This is not just a matter of teaching about the disciplines as social institutions. Again it is a question of initiation. Teachers must come across to students as persons who themselves seek meaning and control through their disciplines, and who are themselves nourished and constrained by the thoughts and passions of other men present and past. They must not be perceived simply as purveyors of knowledge or as manipulators of critical thinking and inductive method, but as men participating in the disciplines for their own ends.

Our second problem stands in the way of all the possibilities we have been considering for the schools. So long as college-bound students, and their teachers, perceive that it is necessary to spend night and day preparing for college, through academic studies, they will be afraid to elect the schools' alternatives, and rightly so. The plain fact of the matter is that these alternatives would prepare students for college, if one must speak of the matter this way, just as well as, if not better than, academic study of the disciplines would alone. This may not be so true of the natural sciences and mathematics, but this should not inhibit us from freeing the curriculum even for mathematics and science concentrators.

The college themselves must take the lead in this. It is ironic that a year or more of absence is fast becoming institutionalized in college, to enable students to get their bearings on what college is all about. It is necessary once again, as was done quite successfully in the Progressive Education Association's Eight Year Study, for the colleges and the schools to negotiate a truce that gives the schools more freedom to experiment with their curriculum.

In all of these proposals we have been laying great stress on collective endeavor. This is partly the result of recognizing the specifically corporate nature of so much of man's effort in the world today, but it is more the consequence of the idea that initiation into society's institutions is a prerequisite of understanding them. We would hope at the same time that students would develop some critical perspective on these institutions, and that they would establish their identity as individuals in some distinction from these institutions. Perhaps in art it is easiest to see how one must both participate and stand apart in order to be an autonomous individual. Somehow this autonomy must be fostered in individuals' relationships to all of society's institutions. Friedenberg, in *The Vanishing Adolescent*, has pointed out how the rebellion of youth today is emasculated by adults' seeming acceptance of youths' opinions and points of view. The problem is to cultivate not only what matters to the students, but what matters to everyone, so that genuine dialogue can ensue among all the parties to any question.

Obviously the structure of the schools will have to change to take advantage of all these needs and possibilities. We envision a combination of formal courses, laboratories, and seminars, involving professional teachers and laymen indifferent capacities in each setting. Much of the school's endeavor would have to be carried on outside the school proper. The concept of an educational park or complex that is now being explored for the purpose of integrating students of different social backgrounds might especially lend itself to this thinking, if such parks were planned in relation to all of society's resources. However, schools in every community could be suited to these proposals, and it would be necessary to carry some of these out in the students' and their families' neighborhoods.

Let us enter one more suggestion. The schools that would result from these adventures would run the risk of separating students from one another even more than the corporation school does today, as they participated now in one and now in another enterprise with different colleagues. In order to provide the opportunity for the students to see themselves in relation to a stable group of others outside the family during these years of their development, the schools might establish small groups of, say, ten or twelve children, early in the school years, that would continue on into their adolescence. New members could be added to a group as other chose to leave or moved out of the community. These groups would not do everything together, but they would meet on a regular basis, perhaps as clubs, and they would engage in some of the school's activities as a group. A group might be reconstituted if it clearly failed to contribute to the students' development and pleasure. The students themselves might be as wise as educators in deciding how these groups should be set up.

These ideas are just a beginning and are meant to be suggestive, not definitive. Some of them have been suggested by steps that inner-city communities themselves are contemplating for the improvement of their schools, and many more will occur to others who confront the problems. We cannot be very sanguine about how the schools and educators will respond to these problems of youth and society. A number of observers have concluded that the schools are too wedded to the nation's system of economic and social selection, in ways that the schools do not even know, to take seriously the

goals of personal and social integration. Some have proceeded to set up private community schools, and others have called for a break from the whole institution of school as we know it. There is merit in both approaches. It seems necessary that education be redesigned, in ways that would change the structure of the schools and schooling fundamentally.

At the same time, school remains the institution that, in the long run, has the greatest potential for focusing society's resources for education. Perhaps the new thinking that inner-city communities are demanding of their schools will someday redound to the advantage of schools in every community. Our awareness of the schools' teaching about society, our sense of larger possibilities for the school may be greatest at the very points where the system has broken down.

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